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IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-26. (Canceled)

27. (Withdrawn) A method for drawing an optical preform of large diameter into an optical fiber or into a preform of smaller diameter, said method comprising:

a) introducing said optical preform into a drawing furnace through a top chimney connected to said furnace, said drawing furnace further comprising a bottom chimney;

b) mechanically sealing the upper portion of said top chimney;

c) heating the bottom end of said preform into the furnace to its softening temperature;

d) introducing a flow of conditioning gas into said top chimney by imparting a downward angled direction to said flow of conditioning gas entering said top chimney; and

e) allowing said gas to flow from said furnace body to said bottom chimney and then outside from said bottom chimney, the speed of the conditioning gas in at least a lower portion of said bottom chimney having a gradient substantially constant or slightly increasing.

28. (Withdrawn) A method according to claim 27, wherein said downward angled direction forms an angle of less than about 45° with respect to the longitudinal axis of the drawing furnace.

29. (Withdrawn) A method according to claim 27, wherein said downward angled direction forms an angle of from about 40° to about 20° with respect to the longitudinal axis of the drawing furnace.

30. (Withdrawn) A method according to claim 27, wherein the increment of the velocity of the gas within said lower portion is from about 1/10 to about 1/100 per mm of height of said lower portion with respect to the velocity of the gas entering into said lower portion.

31-50. (Canceled).

51. (Previously Presented) A drawing furnace for drawing an optical preform, said furnace comprising:

a furnace body having an upper end and a lower end and comprising at least a susceptor, an induction coil and an insulating material disposed between said susceptor and said induction coil;

a muffle connected to the upper end of said furnace body, said muffle comprising a mechanical seal for avoiding inlet of ambient air into the furnace, said muffle being adapted to surround the optical preform before the optical preform is moved into said furnace body;

a bottom portion connected to the lower end of said furnace and wherein said bottom portion comprising at least a lower portion with a decreasing cross-sectional

area from the top to the bottom of the bottom portion in a plane perpendicular to the longitudinal axis; and

a distributor body having a substantially annular distribution chamber, a distribution ring, and an outlet in fluid communication with an interior of the muffle, the distributor body configured to receive conditioning gas substantially tangentially with respect to the substantially annular distribution chamber, the distribution ring being adapted to uniformly introduce and forcedly direct a first portion of the conditioning gas into the muffle in a downward direction towards said furnace body and to direct a second portion of the conditioning gas to an upper portion of the substantially annular distribution chamber to create a buffer of conditioning gas having a pressure higher than a pressure outside the drawing furnace.

52. (New) A drawing furnace according to claim 51, further comprising a feed duct leading from a source of conditioning gas to said annular chamber, said duct being tangentially disposed with respect to said chamber.

53. (New) A drawing furnace according to claim 51, wherein a plurality of fins is radially disposed within the outlet.

54. (New) A drawing furnace according to claim 51, wherein a porous filter is disposed inside the distributor body and interposed between the annular distribution chamber and the downward-angled outlet.

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55. (New) A drawing furnace according to claim 51, wherein a substantially ring-shaped resilient seal is provided on the interior wall of the support collar, said seal preventing ambient atmosphere from entering into the furnace while allowing the preform or the mother rod to be removed from the interior of the furnace through said support collar without sticking to said seal.

56. (New) A drawing furnace according to claim 55, wherein said seal defines a seal height and comprises a seal seat having a seat height, and two opposing seal walls, each of which extends from the seal seat, the ratio of the seal height to the seat height being less than about 2:1, preferably from about 2:1 to about 1.4:1.

57. (New) A drawing furnace according to claim 56, wherein said bottom portion comprises at least a lower portion tapered in the form of a substantially frusto-conical shaped nozzle that is angled from about 12° to about 16° with respect to the longitudinal axis of the furnace.

58. (New) A drawing furnace according to claim 57, wherein said frusto-conical shaped nozzle has a height of from about 200 mm to about 300 mm.

59. (New) A drawing furnace according to claim 57, wherein said frusto-conical shaped nozzle is provided at its bottom end with a shutter portion connected to the bottom of said nozzle, defining an exit aperture that is adjustable to control the size of the exit aperture.

60. (New) A drawing furnace according to claim 57, wherein the bottom portion further comprises an inner wall and an outer wall, which together define a cooling space, through which cooling fluid is circulated to cool the interior of the bottom portion surrounded by said cooling space.

61. (New) A drawing furnace for drawing an optical preform, said furnace comprising:

a furnace body having an upper end and a lower end and comprising at least a susceptor, an induction coil and an insulating material disposed between said susceptor and said induction coil;

a muffle connected to the upper end of said furnace body, said muffle comprising a mechanical seal for avoiding inlet of ambient air into the furnace, said muffle being adapted to surround the optical preform before the optical preform is moved into said furnace body;

a bottom portion connected to the lower end of said furnace and wherein said bottom portion comprising at least a lower portion with a decreasing cross-sectional area from the top to the bottom of the bottom portion in a plane perpendicular to the longitudinal axis; and

a distributor body having a substantially annular distribution chamber, a distribution ring, and an outlet in fluid communication with an interior of the muffle, the distributor body configured to receive conditioning gas substantially tangentially with respect to the substantially annular distribution chamber, the distributor body including

(i) at least one downwardly angled channel operable to forcedly direct a first portion of the conditioning gas into the muffle in a downward direction towards said furnace body and (ii) at least one upwardly angled path to direct a second portion of the conditioning gas to an upper portion of the substantially annular distribution chamber to create a buffer of conditioning gas having a pressure higher than a pressure outside the drawing furnace.

62. (New) A drawing furnace according to claim 61, further comprising a feed duct leading from a source of conditioning gas to said annular chamber, said duct being tangentially disposed with respect to said chamber.

63. (New) A drawing furnace according to claim 61, wherein a plurality of fins is radially disposed within the outlet.

64. (New) A drawing furnace according to claim 61, wherein a porous filter is disposed inside the distributor body and interposed between the annular distribution chamber and the downward-angled outlet.

65. (New) A drawing furnace according to claim 61, wherein a substantially ring-shaped resilient seal is provided on the interior wall of the support collar, said seal preventing ambient atmosphere from entering into the furnace while allowing the preform or the mother rod to be removed from the interior of the furnace through said support collar without sticking to said seal.

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66. (New) A drawing furnace according to claim 65, wherein said seal defines a seal height and comprises a seal seat having a seat height, and two opposing seal walls, each of which extends from the seal seat, the ratio of the seal height to the seat height being less than about 2:1, preferably from about 2:1 to about 1.4:1.

67. (New) A drawing furnace according to claim 66, wherein said bottom portion comprises at least a lower portion tapered in the form of a substantially frusto-conical shaped nozzle that is angled from about 12° to about 16° with respect to the longitudinal axis of the furnace.

68. (New) A drawing furnace according to claim 67, wherein said frusto-conical shaped nozzle has a height of from about 200 mm to about 300 mm.

69. (New) A drawing furnace according to claim 67, wherein said frusto-conical shaped nozzle is provided at its bottom end with a shutter portion connected to the bottom of said nozzle, defining an exit aperture that is adjustable to control the size of the exit aperture.